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ABSTRACT

Hampshire College (Amherst, Massachusetts) has chosen to place special emphasis upon the nature of language and the various ways in which man uses language to communicate. From a wide variety of possible curricula which address these concerns, the Committee on Language and Communication proposes to emphasize certain disciplines usually found in scattered locations throughout the undergraduate curriculum. These active and interrelated disciplines are to be brought togehter to form a core of emphasis which will include logic, in both its philosophic and mathematical forms; computer and information science; linguistics; psycholinguistics; and those aspects of philosophy which examine language and man's dependence upon it. Listed in this planning committee outline is a calendar covering the first two and a half weeks of proposed core lectures during the 1971 Spring course, followed by descriptive material on these lectures. A short bibliography pertinent to the concerns of the Committee and a Language and Communication Division evaluation policy conclude this outline. (AMM)

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[OUTLINE OF PROPOSED LANGUAGE AND COMMUNICATION COURSE FOR SPRING 1971, HAMPSHIRE COLLEGE.]

AL 002 616

HAMPSHIRE COLLEGE

To: Staff Date: September 9, 1970

From: Committee on Language and Communication

Enclosed are the results of our Committee's planning efforts carried out during July. During this month we sketched the outline of the Language and Communication course to be offered to all students next Spring. Your comments and criticisms will be most welcome. They should be forwarded to Jack Le Tourneau who is currently acting as coordinator of the group.

Our plans are to publish a revised copy of these notes as a working paper about the first of October. So comments from you by the middle of September will be appreciated. We are especially interested in suggestions for subjects or speakers for the second lecture series.

Introduction

Hampshire College has chosen to place special emphasis upon the nature of language and the various ways in which man uses language to communicate. From a wide variety of possible curricula which address these concerns, the Committee proposes to emphasize certain disciplines usually found in scattered locations throughout the undergraduate curriculum. These active and interrelated disciplines are to be brought together to form a core of emphasis which will include logic (in both its philosophic and mathematical forms), computer and information science, linguistics, psycholinguistics, and those aspects of philosophy which examine language and our dependence upon it. The common ground of these many disciplines is their study of both natural and artificial languages. Normally, these disciplines are well insulated from each other by departmental boundaries. It is Hampshire College's intention to blend these several areas and create a new curricular emphasis at the undergraduate level. The Committee on Language and Communication* has been formed to develop and implement first a Division I course and then, in cooperation with the Schools of Humanities and Arts, Social Sciences, and Natural Science and Mathematics, a Division II program allowing concentrations within this new area.

The goal of the first course in Language and Communication is to acquaint students with this broad area of study and to enable them to investigate one aspect of the subject in some depth during an eight-week seminar. A general introduction to the area will be undertaken in two series of lectures, supplemented by an introduction to computer language for those students who lack this background.

The core series of Language and Communication lectures will occupy the first two and a half weeks of the Spring term and will constitute a general introduction. This sequence of lectures will raise

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*James Koplin
Jack Le Tourneau
Richard Lyon, Co-Chairman
William Marsh
Stephen Mitchell
Richard Muller
Robert Rardin
Robert Taylor, Co-Chairman

general questions concerning language and introduce some of the formal considerations useful in certain areas of language study. This background should aid the student in selecting an individual seminar. It will also preview some of the kinds of work possible within a Division II Language and Communications concentration. The core lecture series will be staffed by members of the Language and Communication Committee and will provide common experience to which all the students and all the participating faculty can hopefully relate their individual interests.

The second series of lectures will occur less frequently throughout the second (eight-week) period of the Spring term and will explore a wider range of topics in Language and Communication. We hope to be able to invite guest lecturers to give some parts of this series.

During the last eight-week period in this first course, students and faculty will concentrate on a set of approximately eighteen concurrent seminars, whose topics range from formal studies of language and logic to an examination of the mass media. These eighteen seminars will be offered both by members of the Language and Communication Committee and by faculty members from the various Schools within the College.

Core Lectures

Listed below is a calendar covering the first two and a half weeks of core lectures during the Spring course. Following this is descriptive material on these lectures. The development of each of these is the responsibility of the individual listed in the calendar; however, the Committee assumes that whenever appropriate, the organizational and teaching talents of other members of the L & C Committee will be utilized. The core will first raise questions concerning the nature, function and scope of both natural and artificial languages and then display some of man's tentative attempts to answer some of these questions.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
		2/3 Introduction: utilize appropriate media (RM)		2/5 Language and its Effect: Sociolinguistics, Whorf-Sapir (JK)
2/8 Language: History and Change (SM)		2/10 Child Language Acquisitions & Biological Foundations of Language (JK)		2/12 Artificial Languages, especially computer languages (RM)
2/15 Algorithms (JL)		2/17 Logic (WM)	2/18 Students Select Seminars	2/19 Generative Grammar (RR)

Introduction

(Richard Muller)

Through the use of film clips, sound tapes, slides, etc., we hope to produce an entertaining introduction to many of language's most puzzling and charming aspects. (Any suggestions for materials or resources will be greatly appreciated.)

Language and Its Effect

(James Koplin)

The purpose of this lecture is to bring the students from the fairly sensational level of the first presentation to a more detailed consideration of the nature of language study. The exact interconnections between the two sessions must wait until planning for the first case is more complete. Several specific items will be used to accomplish this task. (They will all relate to the general problem of the relationship among social structure, language, and thinking.)

1. Vygotsky and his Russian colleagues have worked on the role of language in the developing control of motor processes as a child matures. He also talks about language

as "the social means of thought." And he states that as the child matures, "the nature of the development (of speech and of intellect) itself changes, from biological to socio-historical."

2. This can lead to a discussion of Whorf which might begin with a strong statement of position - thought is dependent on language - pointing out the difficulties of a real test of this proposition, and moving on to some other formulations.

3. The final instance would be a more clearly sociolinguistic study represented by the work of Bernstein. He began by investigating the discrepancies in academic achievement by children from different social classes. He has developed the concepts of restricted and elaborated code to capture the differences in speech patterns of differing social classes; and then he goes on to show how this affects the child's reactions to the school situation.

Language: History and Change

(Stephen Mitchell)

This lecture introduces the student to the fundamental principles and concerns of historical linguistics. Using the history of the English language as a primary example, the lecture will cover the nature of linguistic change, the sources of change, major Indo-European language groups, and major European theories of language which bear upon contemporary linguistic theory and practice. The major references will be in A. C. Baugh's History of the English Language and Bloomfield's Language.

Child Language Acquisitions and the Biological Foundations of Language

(James Koplin)

Every normal child acquires all of the essential features of his adult language between the ages of 1 1/2 and 4 years. No other organism has ever accomplished this feat at any stage of maturity. A child born anywhere on the globe may be taken at birth and placed in any one of the more than 3000 language communities, and he will effortlessly acquire the appropriate language, without formal tutoring of any sort. Children up to the age of 5 will, also with very little effort, become equally proficient in several languages. These are a few of the many facts that a theory of language development must take into account.

More detailed observations will then be presented in order to be more specific about what it is that the child is doing. Various kinds of recorded instances may be used here to illustrate such features as the regularization of verbs and plurals, the point to be made being that a complex rule system is somehow being formed from the strange mix of spoken inputs that the child gets from the environment.

Next will be an up-to-date summary of the state of attempts to account for how the child accomplishes the task - leading to the conclusion that the job can get done only if there is considerable pre-programming of the nervous system.

Finally, what we have learned from the study of language acquisition will be compared with other mental processes such as perception. Some brief remarks relating language development to physiological indices may also be included.

Artificial Languages

(Richard Muller)

The lecture will be designed for students who have already had modest "hands-on" experience with one computer language - BASIC. At the conclusion of the lecture and its associated reading and exercises, students will be able to:

1. distinguish between the "microprogramming" of a computer, and digital "machine language,", assembly language, and higher level languages;

2. distinguish between compiling and interpreting translators;

3. derive the rules for writing correct statements in BASIC, and state them in a commonly used notation system; and

4. show understanding of the utility of these rules in writing translation rules from BASIC into a lower level computer language.

Algorithms

(J. J. Le Tourneau)

Roughly speaking, an algorithm is a set of instructions which would allow an individual or perhaps a machine to accomplish a given task without recourse to what we call intelligence. Most algorithms are directed toward the accomplishment of very small tasks, but there

are times when the study of an algorithm becomes a major effort. Recall that almost all of elementary school mathematics can be described as the study of the algorithms used to accomplish basic arithmetic computations. Computer languages, again in general terms, can be described as artificial languages designed to describe certain algorithmic processes. Even behavior which appears to be intelligent can sometimes be mimicked by a process which is clearly algorithmic. This lecture is designed to introduce the general notion of algorithm, point out the wide variety of potential application and initiate certain questions concerning the limitations of algorithms. The work concerning the possible limitations of algorithmic behavior raises naturally certain questions of philosophy, questions especially related to the foundations of science and mathematics. Examples will be drawn from a wide variety of sources.

Logic

(William Marsh)

Although language as we speak or write it is a one-dimensional linear thing, it is very convenient to analyze it with two-dimensional "tree diagrams." A version of these, called "semantic tableaus," has recently been used to explicate and give algorithms for the solution of problems in propositional logic. Since many of us enjoy being able to shout "bullshit!" and then show that what someone who annoys us has just said can't possibly be true, or that something he claimed as a conclusion doesn't follow from his premises, it is probably worth an hour's time to learn an automatic, sure test for what is called the consistency of a set of propositional statements.

It will turn out that tree diagrams are the best way to describe the so-called deep structures of English sentences and are also a very clear way to describe the "context-free" languages which show up most commonly as formal or computer languages.

Generative Grammar

(Robert Rardin)

Readings: Postal. Underlying and Superficial Linguistic Structure
Chomsky. The Formal Nature of Language

The lecture will begin with a discussion of the goals of linguistics. Natural language may be viewed as a formal object, as a set of strings or "sentences." The linguist attempts to account for (i.e., generate) the sentences of individual languages - extracting, whenever possible, universal generalizations which hold for all natural languages.

From this perspective four possible models for English may be critically examined: simple enumeration grammar, finite state grammar, phrase structure grammar, and transformational grammar. The crucial distinction between deep and surface structure can be motivated by demonstrating that ambiguous surface structures generally differ in deep structure.

The phrase structure rules of English syntax will be detailed and some of the major transformations will be defined (e.g., passive, subject-verb inversion, question formation). After this sketch of syntax, the other components of grammar - phonology and semantics - will be briefly discussed. Finally, the relation between this theoretical model and the facts of language acquisition, language use, and language change will be explored.

Second Lecture Series

During the last eight weeks of the Spring term, the Language and Communication Committee will conduct a series of regularly scheduled lectures. This series is still largely undefined. The Committee hopes to invite speakers from within the Five-College community, as well as persons from other areas, to participate. Any suggestions for speakers or topics that you might have will be greatly appreciated.

Some of the topics proposed for inclusion within the series are:

- Artificial Intelligence
- Computer Graphics
- Language Philosophy
- Problems of Computer Automation
- Privacy and Data Banks
- Animal Communication
- Problems of Translation
- The Maintenance and Transmission of Value through the Media
- Pop Culture and Language
- Sign Language in Chimps and People
- Speech Pathology
- Information Theory
- Information Science
- Extraterrestrial Language
- Future of Computers

Computer Instruction

Computer language provides one of the best and most useful examples of a special purpose, artificial language. The Committee feels

that due to the pervasiveness of computer applications in our society and the computer's immense potential for both injurious and beneficial ends that a basic understanding of computer language and capabilities is essential to a modern liberal education. The most useful introduction to computer language and to the capabilities and limitations of computing machinery is provided by "hands on" experience. To provide such experience the Committee, during the period of core lectures, will conduct initial instruction and laboratory work on a time sharing system, using the computer language BASIC.

Seminars

The major part of the student's work during the Language and Communication course will be devoted to intensive study in one seminar. The course will offer a selection of eighteen seminars ranging over a wide variety of topics. Eleven of these will be given by members of the Committee (see descriptive material below) and the rest by faculty from the three Schools. The determination of seminars to be given by non-Committee members is yet to be made, but some of the topics which the Committee is discussing are:

→The History of English
→Non-Verbal Communication
→Linguistics and Stylistics
→Language Limitations
→Political Propaganda
→Codes and Ciphers
→The Grammar of Film

Seminars to be given by members of the Committee are:

James Koplin	:	Language Acquisition
	:	Speech Perception: Decoding of the Acoustic Stream
J. J. Le Tourneau:		Language and Society
		Artificial Intelligence
William Marsh	:	Mod Logic
		Susanne Langer's New Key
Stephen Mitchell	:	The Historical Development of Computers
Richard Muller	:	Modeling a Computer on a Computer
Robert Rardin	:	Dialects and Social Structure
		An Introduction to Phonology
Robert Taylor	:	Communication and Information Retrieval

Seminar Descriptions

Language Acquisition

(James Koplin)

Almost all children acquire the language of their community on a regular schedule and within a relatively short period of time. We will spend most of this course examining what it is that the child does in this task. Special attention will be given to the descriptive material in such sources as Ruth Weir's Language in the Crib, moving on to Roger Brown's studies of preschool children, and finally to Carol Chomsky's analysis of the continued development of language in the grade school years. There is no substitute for a thorough acquaintance with this work as assistance in avoiding inadequate answers to the question, "How does a child do it?" The only accurate answer at this time, however, is that "nobody really knows."

A final block of time would be given to sketching the reasons why progress toward a solution has been so slow. The place of this area in the larger domain of cognitive psychology will be touched upon.

Speech Perception: Decoding of the Acoustic Stream

(James Koplin)

Many levels of analysis are required in order to extract the meaning from the speech signal. One of these levels involves the segmentation of the acoustic stream into phoneme units. This course would begin by considering the nature of the task that the ear performs. This descriptive material immediately demonstrates that "decoding" is the right term since there is no one-to-one match between physical signal and phoneme. It also attracts attention because the results violate expectations, e.g., much of what we hear as phonemic units has no direct correlate in the physical signal. This section will draw heavily on the work of A. Liberman and associates at the Haskins Laboratories and the University of Connecticut as published in the Psychological Review, Perception and Psychophysics, etc.

Language and Society

(J. J. Le Tourneau)

The purpose of this course is to explore some of the relationships between language and society, in particular the effect of language upon social organization. This exploration properly cuts across the widest possible set of defined disciplines - linguistics, psychology, sociology, anthropology, biology, literature, art, etc. Because of the breadth demanded by such a study, the instructor assumes that his role will be one of facilitator rather than tour guide. At each meeting of the seminar, we hope to invite people

knowledgeable within more confined areas to act as resource for our discussions. The class in general will be totally self-directing with only two provisos: (1) the entire group meet at least once a week to discuss a major work, and (2) each member of the seminar develop one interest into a project of depth during the course of the seminar.

Artificial Intelligence

(J. J. Le Tourneau)

Artificial intelligence can be defined as the study of methods which allow machines to act in ways which would be called intelligent by a human observer. During the last fifteen years, certain steps have been made in this direction (for example, it is now possible for a computer to learn to play checkers at the level of current world checker champions). However, in spite of progress on many frontiers, the area of artificial intelligence fails to have many central concepts of theories which can be broadly applied. Study in this area has indeed been attacked by many as either premature, presumptuous, or possibly an affront to man's dignity. However, it is precisely the freshness of the area which draws many workers. During the course of the seminar, we will study some of the current literature in artificial intelligence and some of the criticism this literature invokes.

One topic in particular to be studied is the work surrounding the famous Gödel incompleteness theorem of mathematical logic. Many have claimed that this theorem gives suitable evidence that man's mind will never be replaced by a machine. Another possible conclusion of this theorem is the impossibility of ever inventing a perfect scientific language.

One theme constantly in the background whenever the question of artificial intelligence is approached is the large debate concerning the nature of mind and the nature of machine. We will study many authors' attitudes concerning both of these questions and will read not only scientific but philosophic and religious works.

Mod Logic

(William Marsh)

This seminar will use the tense, aspect, and modal systems of English as an entry to problems in three disciplines: linguistics, philosophy, and mathematics. Perhaps after constructing a description of these systems and after seeing the extension to modal propositional logic of ideas presented in the core lectures, the individuals in the seminar can then choose which topics they would like to pursue. Possibilities include reading some of the papers in linguistics on the verb auxiliary, investigating the philosophic problem of necessary versus contingent truth, considering problems of quantifiers in modal logic, or doing some of the mathematics of systems of modal logic.

Susanne Langer's New Key

(William Marsh)

Language is possibly the major factor in man's uniqueness among the animals. Susanne K. Langer investigated extensions of one of language's most basic features - symbolization - to other aspects of human experience and action. Starting with symbolic logic, in which she wrote a text, and influenced by the role of symbols in Freud's analysis of dreams, she went on, in particular, to propose a major philosophy of art.

This seminar will be led by a logician interested in the appropriateness of extending ideas from the formal core of this course to related areas. After reading Philosophy in a New Key, the seminar can move in any of several directions, e.g., studying the philosophy of a particular art form, investigating (as much as beginners can) theories of perception and dreaming, speculating about logic or language, or following Langer's ideas through her later work. Briefly the seminar will try to find out in what ways man is better defined as the symbol-using animal rather than as the featherless biped.

The Historical Development of Computers

(Stephen Mitchell)

A seminar based on the discussions of the growth and development of computational devices, starting with the self-instructing Jacquard loom, moving on to the mechanical devices of Babbage, the use of tabulating equipment by the U. S. Census and ending with the rapid growth of electronic computational devices from the later 1940's on. The seminar will attempt also to trace the major intellectual developments on which the actual hardware depends. At the end of the semester, the student should have some grasp of why we have certain computers but not others, why some machines are yet to be built, and why change and continual innovation is characteristic of the computer market.

The seminar will make several field trips to view on-site equipment and will construct a number of small computing devices for its own pleasure and edification.

Preliminary Bibliography

Giedion, Siegfried. Mechanization Takes Command. Oxford, 1948.

Rosen, Saul. "Electronic Computers: A Historical Survey." Computing Survey, March, 1969, pp 7-37.

Sammet, Jean. Programming Languages: History and Fundamentals. Prentice-Hall, 1969.

Truesdell, Leon. The Development of Punchcard Tabulation. GPO, 1965.

Modeling a Computer on a Computer

(Richard Muller)

The result of the seminar will be a conceptual model of the digital computer, implemented on the UMass or other accessible time-sharing computer. The seminar will consider the important conceptual components of computers (e.g., "words" of memory; index and base registers; accumulators; instruction registers and counters) and the machine language commands associated with basic hardware functions of the machine (e.g., clear and add, store, indexing). The seminar will then design a hypothetical computer including these structures and operating by these commands; and implement this hypothetical machine on a time-sharing system where its simulated operation can be observed. Students with unusual programming interests and experience may go on to develop assemblers and higher-level languages for programming this hypothetical computer.

The emphasis will be on the process of producing the model. Since the programming problem of implementing the model of the machine is larger than one student can probably tackle in the course of nine weeks, this job will be shared. This experience should develop insights into the organizational and human problems of developing the kinds of large software systems commonly encountered, such as billing, accounting, airline reservations, and payroll.

Dialects and Social Structure

(Robert Rardin)

Every language exhibits dialectal variation. Within language communities we find certain distinctive dialectal features of vocabulary, phonology, and syntax, which are restricted to particular age groups, social classes, and geographical populations. These dialectal features may have great social significance, since an individual's speech characteristics are often extremely important in determining his group membership.

Some dialects of a language are automatically accorded prestige because they happen to be spoken by powerful groups; others are less favored. The stratification of a society is often reflected in, or even perpetuated by, dialectal differentiation. The sentences "I ain't got no money" and "I don't have any money" communicate to the hearer exactly the same semantic material. From a functional point of view, they are equally effective. The two sentences differ radically, however, in the social status which they accord the speaker.

The seminar on dialect will examine the formal nature of dialectal differentiation and attempt to assess its consequences for linguistic, social, economic, and political evolution. Anticipated topics include bilingualism (its influence upon individual psychology and

national policy), the character and function of slang and obscenity, the underlying motivations behind campaigns for linguistic purity, the language problems of developing nations, and the role of mass media in dialect leveling. Dialects to be examined may include Black English, Yiddish, immigrant language in America, Canadian French, Swiss German, Scandinavian. Special attention will be directed toward dialects spoken by seminar participants.

An Introduction to Phonology

(Robert Rardin)

Phonology is a major component of the grammar of natural languages. The existence of alphabets constitutes evidence that natural language systematically employs a strictly delimited set of "sounds", a formal system which babies, drunks, and foreigners routinely violate in one way or another. A universal feature shared by all languages is the utilization of a small number of distinctive phonological features to pattern the infinite set of grammatical utterances constituting language.

The seminar in phonology will investigate the formal properties of phonological systems, devoting particular attention to the phonological structure of English. Theoretical concepts such as underlying representation, phonological rule, rule ordering, rule generality, and rule exception will be introduced, and the "abstractness" controversy within phonology will be discussed. Aphasia, phonological aspects of child language acquisition, theories of phonological change and topics in acoustic phonetics will also be treated as time and the interest of participants may dictate.

Communication and Information Retrieval

(Robert Taylor)

This is a laboratory/seminar centered around the various ways man interacts with his recorded knowledge, with the systems he uses to organize his recorded knowledge, and with the informal information networks that man, particularly scientists and technologists, develop to augment their formal systems.

One of our major concerns will be to design an information retrieval system, both manual and automated, with a limited set of documents in the field of Language and Communication. We hope that our efforts in the laboratory/seminar will provide a base for an on-going information retrieval system of use to the Program in future years.

In brief, we will explore the ways man interacts with his recorded knowledge. We will be concerned with the kinds of questions he asks and the kinds of answers he anticipates. We will design a retrieval system with documents of interest to the seminar.

Preliminary Bibliography

Cherry, C. On Human Communication, 2nd Ed. MIT Press, 1968.

Licklider, J. C. R. Libraries of the Future. MIT Press, 1965.

Price, D. Science Since Babylon. Yale, 1961.

Salton, G. Automatic Information Organization and Retrieval. McGraw-Hill, 1968.

Taylor, R. "Question Negotiation and Information Seeking in Libraries." College and Research Libraries, May 1968, pp. 178-194.

A Short Bibliography

Listed below is a short bibliography of materials pertinent to the concerns of the Committee on Language and Communication. If you are interested in any of these matters, check the appropriate line and return the pages to Jack Le Tourneau, coordinator of the group. The Committee will be glad to furnish or loan the requested material.

Articles

____ J. Bronowski & U. Bellugi, "Language, Name and Concept", Science, 8 May 1970, pp. 669-673. An assessment of "Teaching Sign Language to a Chimpanzee" in our understanding of human language.

____ N. Chomsky, "Language and the Mind", Psychology Today, Feb. 1968, pp. 48-51+. There are also short articles by Chomsky in Communication and Culture and Biological Foundations of Language.

____ R. Gardner & B. Gardner, "Teaching Sign Language to a Chimpanzee", Science, 15 August 1969, pp. 664-672.

____ L. Henkin, "Completeness". Among other things, this lecture indicates the place of the Gödel Incompleteness Theorem in the foundations of mathematics

____ L. Henkin, "Truth and Provability."

____ L. Hoffman & W. Miller, "Getting a Personal Dossier from a Statistical Data Bank", Datamation, May 1970, pp. 74-5. This and a recent Newsweek cover story give a quick introduction to the problem of data and privacy.

____ E. Lenneberg, "On Explaining Language", Science, 9 May 1969, pp. 635-43. Also an article in Language.

____ P. Postal, Epilogue in English Transformational Grammar, p. 23. A clear overview of transformational-generative grammar. Also an article in Language.

____ R. Robins, "Linguistics in the Present Century", Chapter 8 of A Short History of Linguistics, pp. 198-233.

____ S. Rosen, "Electronic Computers: A Historical Survey", Computing Surveys, March 1969, pp. 7-34.

____ G. Salton, "Automatic Text Analysis", Science, 17 April 1970, pp. 335-43.

____ S. Sedelow, "The Computer in the Humanities and Fine Arts", Computing Surveys, June 1970, pp. 89-110.

____ G. Steiner, "The Language Animal", Encounter, Aug. 1969, pp. 7-24, Breathy.

Anthologies

____ M. Black, The Importance of Language, Prentice Hall, 1962, paper.

____ C. Caton, Philosophy and Ordinary Language, U. of Illinois, 1963, paper.

____ Fodor & Katz, The Philosophy of Language.

____ R. Oldfield & J. Marshall, Language, Penguin, 1968, paper.

____ F. Smith & G. Miller, The Genesis of Language: A Psycholinguistic Approach, MIT, 1966, paper.

____ A. Smith, Communication and Culture, Holt Rinehart & Winston, 1966.

Books

____ W. Alston, Philosophy of Language, Prentice-Hall, 1964, paper.

____ M. Arbib, Brains, Machines and Mathematics, McGraw-Hill, 1964, paper.

____ C. Cherry, On Human Communication, MIT, 1966, paper.

____ N. Chomsky, Language and Mind, Harcourt, Brace & World, 1968, paper.

____ R. Jacobs & P. Rosenbaum, English Transformational Grammar, Blaiswell, 1968.

____ S. Langer, Philosophy in a New Key, Mentor, 1942, paper.

____ E. Lenneberg, Biological Foundations of Language, Wiley, 1967.

____ M. Minsky, Computation: Finite and Infinite Machines, Prentice Hall, 1967.

____ H. Simon, The Science of the Artificial.

L & C Division I Evaluation Policy

The 1971 Spring course in L & C is one of the two common courses in which Hampshire College expects all Division I students to be examined during their first year. The main emphasis of the examination will ordinarily be upon the work done by the student within an L & C seminar[1], and the entire examination can be divided conveniently into three parts:

A. Seminar topics - the method of designing this part of the examination is identical with the general plan discussed in the Hampshire College catalog under the heading 'Examinations'.

B. Computer programming - each student taking the examination will be given the opportunity to exhibit at least minimal skill as a programmer in any computer language with which he is familiar. For those students unfamiliar with elementary programming or for those students who wish to review or acquire another computer language, the course will provide sufficient instruction and experience with the language BASIC to assure the necessary background for successful completion of this part of the examination[2].

C. Additional topics - each student is encouraged to explore the topics discussed either in the core lectures or the continuing L & C lecture series (which will be a part of the course) or interested of his own within the field and to submit examination questions to his file reflecting this work. These questions need not be directly derived from the student's seminar work. Questions of this kind will appear on the student's examination only if the student has placed them in his examination file and the Committee on L & C has approved them.

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[1]The Spring course in L and C will provide eighteen seminars from which the student may select. Rather than select one of these seminars, however, the student may elect independent study within the field of L and C. This option is available with the understanding that the general requirements imposed on independent study by the Hampshire College catalog are to be followed. For the Spring course the requirements must be modified in two unessential ways: (a) the Chairman of Language and Communication will replace the School Dean in the list of approvals required, and (b) all proposed plans of individual study must be approved not later than February 19, 1971.

[2]In principle, it is possible to pass the entire examination without having acquired minimal programming skills, but the prospective student should be aware that this places a large burden on his performance in the other parts of the examination.